

***Pseudomethoca ilione* (Fox), A New Synonym of *P. gila* (Blake)
(Hymenoptera: Mutillidae)¹**

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Abstract.—*Pseudomethoca gila* (Blake) (Hymenoptera: Mutillidae) has been known only from the male sex. *Pseudomethoca ilione* (Fox) has been known only from the female sex. Observations over a 6-yr period have provided sufficient evidence (including mating pair) that the two are the same species. The name *P. gila* has precedence over *P. ilione*. A complete synonymy is included.

Pseudomethoca gila was first described as *Mutilla (Sphaerophthalma) gila* by Blake (1871). It has been known only from the male sex. *Pseudomethoca ilione* was first described as *Mutilla ilione* by Fox (1899). It has been known only from the female sex. Mickel (1924) suggested that *P. nephele* (Fox) might be the female of *P. gila*. He offered no evidence for his suggestion.

OBSERVATIONS

Field data on the association of *P. ilione* and *P. gila* were obtained over a 6-yr period (1982-1987) during a study of the biology of the small panurgine bee, *Pseudopanurgus rugosus* (Robertson). A full report of the biology of *P. rugosus* will be published elsewhere. *P. rugosus* is a solitary species in the sense that there is only one female per nest, although the bees commonly form dense, persistent nest aggregations. The nesting aggregation of interest for this report is located in a 2 by 3-m plot on the edge of a path at the Brackenridge Field Laboratory (BFL) of the University of Texas at Austin, Texas. This aggregation has been active for at least 9 yr although intensive observations did not begin until 1982. *P. rugosus* is the only bee nesting in this plot but nests of *Halictus ligatus* Say, several species of *Melissodes* and several sphecids have been observed nearby. Maximum density of active bee nests in the plot has varied from fewer than 30 to more than 200 nests over the 6-yr period. *P. rugosus* is univoltine with nesting activity at BFL normally occurring from the first or second week of May to the third or fourth week of June. During the 6 yr of observations, 3-4 males of *P. gila* and 2-3 females of *P. ilione* were regularly present at the nest aggregation during the first two-thirds of the bee nesting season. A maximum of 14 male mutillids (but no females) was observed in a 1.5-m area on 3 June 1986. While numerous species of mutillids

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have been collected at BFL, *P. gila* and *P. ilione* were the only *Pseudomethoca* observed at the nest aggregation.

Female wasps were noted at the *P. rugosus* nest site only during the period of bee foraging (normally 0900 to 1430 hr CDT) but males were present up to an hour before bee activity. Female wasps wandered through the nest area in a seemingly random manner, occasionally probing nest entrances with their antennae. Actual entrance of open nests by female wasps was rarely observed. Nests of *P. rugosus* are normally closed with a loose soil plug except during foraging periods. Female mutillids were not observed attempting to enter plugged nests but this could have easily been overlooked given the density of nests, low numbers of female mutillids and the fact that most observations concentrated on the provisioning schedules of the bees. Male wasps also walked over the nest area or perched on grass stems but paid no attention to bee nests. No aggressive interactions of wasps and bees were observed. Matings, or mating attempts, of *P. gila* and *P. ilione* were occasionally observed but most females were ignored by males. One pair taken in copula involving a female which had just exited a *P. rugosus* nest proved to be a male of *P. gila* and a female *P. ilione*. Brothers (1972) has noted that previously mated females of *Pseudomethoca f. frigida* (Smith) are not attractive to males of that species. Although the long term association of the bees and wasps strongly suggests that *P. rugosus* is a host of *P. gila*, no mutillids have yet been recovered from 100+ excavated nest cells of *P. rugosus*.

Based on these observations, it is our contention that *P. gila* (Blake) and *P. ilione* (Fox) are, in fact, male and female, respectively, of the same species. Since the name *P. gila* has precedence over *P. ilione*, that name should stand. A complete, updated synonymy for the species follows.

Pseudomethoca gila (Blake)

- Mutilla (Sphaerophthalma) gila* Blake, 1871:250. ♂
Sphaerophthalma (sic) *gila* Blake, 1886:245. ♂
Sphaerophthalma (sic) *gila*: Cresson, 1887:265. ♂
Mutilla gila: Dalla Torre, 1897:43. ♂
Mutilla gila: Fox, 1899:225. ♂
Pseudomethoca? (sic) *gila*: Andre, 1903:28. ♂
Pseudomethoca gila: Mickel, 1924:13. ♂
Mutilla ilione Fox, 1899:268. NEW SYNONYM. ♀
Ephuta (Ephuta) ilione: Andre, 1903:60.
Photopsis ilione: Krombein, 1951:754.
Pseudomethoca ilione: Mickel, 1965:2.
Mutilla aprica Melander, 1903:322. NEW SYNONYM. ♀
Pseudomethoca aprica: Mickel, 1924:16.

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